

# Tone King

## "Galaxy"

### User's Manual

1.1 8/25/2015



**Tone King Amplifiers**  
A division of Premier Builders Guild LLC  
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## Note from the Builder

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Thank you for choosing Tone King's "Galaxy" model guitar amplifier. I designed the original Galaxy in 1995, as a higher powered follow-on to the 40W Continental model. It was introduced at the 1996 NAMM show (see photo below) as a head with matching 4x12 cabinet. The speaker cabinet was derived from the Continental design, a trapezoid shaped open back cabinet which rested on 4 tapered wooden legs. This



Galaxy amp had a sparkling clean tone with tons of headroom, and a searing crunch tone that was unbelievably loud for a 60W. I only built about 2 dozen of these monsters before I discontinued the model and radically changed the product line in 1997.

Then, in 2010, I went back to the bench to design a new 60W amp. The idea was to feature that big, thick, chimy 6L6 sound with tons of headroom, almost like a bit more manageable version of a Dual Showman. I did a lot of work with the

output stage, output transformer, and power supply to get the tone and feel just right. I ended up with a cathode biased 4x6L6 design, with no negative feedback, that does some pretty amazing things. For one, the clean tone has a nice thickness to the mids, with a real weight to each note, and a sweetness to the top end that gives it plenty of 'air' on top without sounding too bright.

When you crank it up, you get that growl and "kerrang!" of an old Bassman or early JTM45. You can even if you crank it up a bit more for a nice thick singing crunch, and still turn back your guitar's volume control to get a sparkly clean without a hint of grit. Although this new design is quite different and more refined than the old Galaxy of 1995, it does have roughly the same features and layout. The main difference between the two is that this new Galaxy is paired with a more practical and manageable 2x12 cabinet, instead of the original 4x12. As always, I put a fair amount of effort into voicing this new 2x12 for the optimum combination of big-iron blackface cleans and punchy Bassman growl.



I thank you for your purchase of the Galaxy amplifier, and I hope you enjoy playing it as much as I do.

Best Regards,

Mark Bartel

Tone King Amplifiers, a division of Premier Builders Guild LLC

## **Safety Instructions (Important !)**

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1. Please read these instructions, and keep them for reference.
2. Please follow all instructions described here.
3. Do not use this apparatus near water.
4. Clean only with a dry cloth.
5. Do not block any ventilation openings.
6. Do not operate near any heat sources such as radiators or heat registers.
7. Protect the power cord from being walked on or pinched, particularly at the plugs and at the point where they exit from the apparatus.
8. Only use attachments/accessories specified by the manufacturer.
9. Unplug this apparatus during lightning storms or when unused for long periods of time.
10. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way. For example, if the power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
11. CAUTION: To disconnect the unit completely from the MAINS, unplug the unit. Turning the power switch off does not disconnect the unit completely from the MAINS.

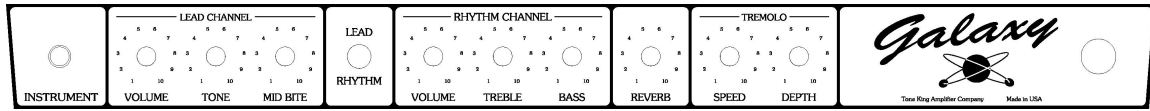
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# 1. Front Panel Controls

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## Two Preamp Channels – Lead and Rhythm

The Galaxy has two separate preamplifier channels, each with its own unique voicing. You can switch between the channels with either the “Lead/Rhythm” switch (on the front panel) or with the “Channel” switch on the footswitch. When using the footswitch, you should set the front panel switch to the “Rhythm” position. You’ll notice that the LED on the footswitch indicates the channel selected. When the LED is lit, the Lead channel is selected. When the LED is not lit, the Rhythm channel is selected.

## Rhythm Channel

The Rhythm channel includes controls for Volume, Treble, and Bass. This channel is designed to deliver a “vintage 1960’s clean tone” – the type of tone you might associate with a well known brand of amplifier made in California during that period. This tone is characterized by a crisp, present top end, a slightly “scooped” midrange, and a full bottom end.

The Bass and Treble controls act much like they would on a genuine vintage amp of this type. The Galaxy is a bit unique in that you’ll find a wide range of usable tones at just about any setting of the Bass and Treble controls, but here are a few sample settings to get you started:

### 1960s Clean Tone

Volume	Treble	Bass
3	4	6

### “Pushed” Clean Tone

Volume	Treble	Bass
6	3	3

## Lead Channel

The Lead channel starts out with a Tweed style preamp, which drives a proprietary tone-shaping circuit built around the Mid-Bite control, a unique Tone King feature. This proprietary circuit transforms the basic tweed tone to more of a crunchy rock tone as you turn up the mid-bite control. This is accomplished by simultaneously tightening up the bass, rolling off the very high frequencies, increasing the gain, and developing a pronounced upper midrange peak. The Mid-Bite control is the key to dialing in your own particular sound on the lead channel, so you may want to experiment and observe its effect as you rotate it from 1 to 9.

Here are a few sample settings which demonstrate just a few of the tones available with the Lead channel:

### Old Style Tweed Clean

Volume	Tone	Mid-Bite
3	5	1

### Cranked Tweed

Volume	Tone	Mid-Bite
5	4	1.5

### Rock Grind

Volume	Tone	Mid-Bite
7	5	5

### Thick, Chunky Mids

Volume	Tone	Mid-Bite
7	5	9

## **Reverb**

The Galaxy includes a built in 2-spring, tube-driven reverb circuit. Reverb is applied to both the Rhythm and Lead channels. In order to compensate for the higher gain of the Lead channel, the reverb drive is reduced slightly on the Lead channel. This reduction helps to match the reverb level when switching between preamp channels, when the Lead channel is being driven hard and the Rhythm channel is set for a clean tone.

The Reverb level is controlled by the front panel Reverb control, which adjusts the amount of the reverb signal which is mixed into the signal path.

## **Tremolo (Rate & Depth)**

The Galaxy's tremolo circuit is a form of the old-fashioned "bias modulation" tremolo circuit. This circuit achieves the tremolo effect by varying the bias of the output tubes.

This type of circuit creates the tremolo effect by varying the gain of the output tubes. This has the benefit of providing a nice smooth, rounded modulation effect, but it does have some limitations. In particular, at very slow speeds, and/or high settings of the depth control, you may hear some "thumping" or other sonic artifacts. This is a limitation of this particular method – it can't provide a very deep, "on-off" style tremolo, like you would get with an "opto-coupler" type tremolo circuit.

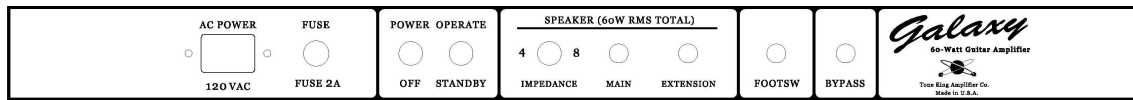
The "Depth" control varies the intensity of the modulation effect, and the "Rate" knob controls the speed of the effect.

If the footswitch is not being used, then the tremolo circuit is active all the time, so you will need to turn the "Depth" knob all the way down if you do not wish to use tremolo.

When the footswitch is plugged in, you can turn the tremolo on and off with the footswitch. An LED shows the status of the effect (LED on = tremolo on)

## 2. Back Panel Controls

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### AC Power

Always use a grounded AC cord, and make sure that a proper ground connection is supplied to the amp. Never attempt to lift or defeat the ground connection to the amp.

### Fuse

Although the markings on the back panel indicate a 2A fuse, you should use a standard 3A slo-blo fuse (style 3AG).

### Power Switch, Standby Switch

When powering up the amp, you should start with both the Power and Standby switches in the "off" position.

First, turn on the Power switch. This will apply power only to the tube filaments and the low-voltage circuitry.

After turning on the Power switch, allow the tubes to warm up for about 1 minute, then turn on the Standby switch.

The power-down sequence is not as important as the power-up sequence. When turning the amp off, you may turn Power off before Standby, or turn Standby off before Power, or turn them both off at the same time.

### Footswitch

Connect the footswitch to the amp with the supplied cable, or with any standard ¼" TRS (Stereo) -to- ¼" TRS (Stereo) cable.

The footswitch allows you to control both the preamp channel selection and the tremolo on/off. LEDs indicate the current switching status, as follows:

Channel switch: LED on = Lead channel

Tremolo switch: LED on = Tremolo on

When using the footswitch, make sure to set the front panel Channel switch to the Rhythm position.



## **Speaker Jacks, Impedance Switch**

When only one speaker is being used, it must be plugged into the “Main” speaker jack, and the Impedance switch should be set to match the impedance of that speaker.

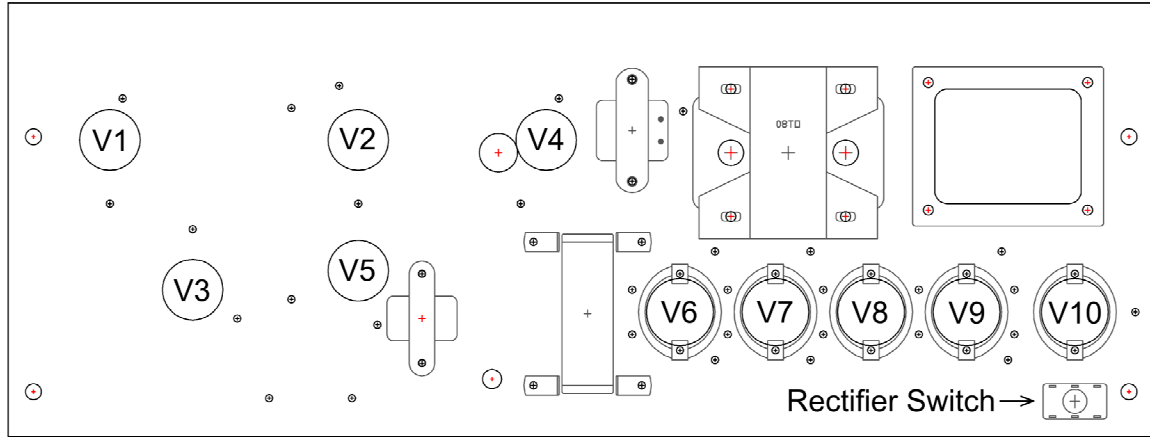
The Extension speaker jack may only be used if there is also a speaker plugged into the Main speaker jack. Inside the amp, the Extension speaker jack is wired in parallel with the Main speaker jack. When using an extension speaker, it is best for the extension speaker and main speaker to have the same impedance. Since the main and extension speaker jacks are wired in parallel, the total combined impedance seen by the amp will be equal to  $\frac{1}{2}$  of either speaker’s impedance.

For example, if you are using an 8-ohm speaker connected to the Main speaker jack, and another 8-ohm speaker connected to the Extension speaker jack, the total combined load impedance will be 4 ohms, so you should set the Impedance switch to 4 Ohms.

## **Bypass Jack**

The bypass jack is provided for use with the optional Ironman in-cabinet attenuator. When this attenuator is installed in the Galaxy speaker cabinet, the Bypass input on the Ironman is to be connected to the Bypass output of the Galaxy head. This causes the attenuator to be bypassed then the Channel switch is set to the rhythm position.

### 3. Tube Installation and Replacement



#### Choice of Tube Types and Brands

I currently recommend the following tube types:

No.	Type and Brand	Function
V1	TAD 12AX7A-C / Tung-Sol 12AX7	Stage 1 (Rhythm+Lead), Stage 2 (Lead)
V2	TAD 12AX7A-C / Tung-Sol 12AX7	Stage 2 (Rhythm), Stage 3 (Lead)
V3	EH 12AT7	Reverb Driver
V4	TAD 12AX7A-C / Tung-Sol 12AX7	Reverb receiver
V5	TAD 12AX7A-C / Tung-Sol 12AX7	Phase Inverter
V6-V9	TAD 6V6WGC	Output Tubes
V10	(Optional) Sovtek 5AR4	Rectifier

#### Rectifier Tube V10

The Galaxy has an internal rectifier that is designed to replicate the V/I curve of a 5AR4 tube. This internal rectifier does an excellent job at replicating the sound and feel you would get with a 5AR4 tube, while reducing power draw and heating of the chassis. An auxiliary tube socket (V10) and associated Rectifier Switch (shown on the diagram above) is provided to allow the use of a 5AR4 tube rectifier. The Galaxy is not supplied with a 5AR4 tube. From the factory, it is set to use the internal rectifier. The tube is an option.

## **Notes on Currently Available Tube Brands**

The tube brands shown above are my own preferences. You may want to use other brands, to tailor the sound to your own tastes. Here are a few notes on the various brands available today:

### **12AX7 Tubes:**

Both the TAD 12AX7A-C, and the Tung Sol 12AX7A are a great match for the Galaxy. Both have a nice balance of detail and warmth, with the Tung Sol having perhaps a bit more transparency in the top end, and the TAD having a bit less glassiness but still a nice presence in the upper mids.

EH 12AX7s are very similar to Tung Sol 12AX7s – both are very quiet with very low microphonics and are a bit on the bright side, with an extended top end. Tung Sols seem a bit warmer than EHs.

The Svetlana 12AX7, a short-plate tube, has nearly the clarity of the 12AX7EH, and slightly more bottom end, but is a bit congested in the midrange. Years ago, I had selected this brand as the brand of choice for the Meteor/II amp, but later changed to a combination of the 12AX7EH and the 12AX7LPS.

Sovtek 12AX7LPS – this long-plate 12AX7 has a big, warm sound that comes close to a good NOS long-plate 12AX7. However, this tube can tend to be microphonic.

## **Alternate Tube Choices You May Want to Try**

Reducing Gain: If you find the preamp too gainy, and you find that you're setting the volume controls down quite low to get sufficient clean headroom, you may want to try swapping in a 12AU7 in the V2 position. You can reduce the gain further by swapping a 12AU7 into the V1 position as well.

## **Installing Tubes**

When installing tubes, you may find it helpful to lay the amp on its face (speaker pointing toward the ground), on a table, and shine a light directly into the back of the amp, to aid in locating the position of each tube. Tubes must be installed in the correct orientation. The smaller, all-glass tubes have a blank space in the ring of pins which must line up with the blank space in the ring of tube pins in the tube socket, located on the chassis. The larger, bakelite-base tubes have a small cylinder with an indexing key in the center of the ring of tube pins, and this indexing key must match up with the corresponding slot in the socket on the chassis.

## **Replacing Output Tubes**

The output stage of the Imperial is fully cathode biased, and no bias adjustment is necessary when changing output tubes. The design of the Imperial's output stage allows a fair amount of margin for variation in tube characteristics, so any known brand of 6V6 can be installed, and will work properly and be appropriately self-biased.

## **Tube Quality**

Currently manufactured tubes are built in China, Russia, or the Czech Republic, and are not built to the same quality standards as tubes manufactured by the U.S. manufacturers in the "glory days" of tube manufacturing.

We musicians choose to use vacuum tubes because of their tone, but we need to accept that the tubes available to us these days can be imperfect devices, and are most certainly the least reliable component in the entire amplifier.

It would seem that the obvious solution would be to use new-old-stock tubes that were made back in the "glory days", when tubes were properly made. However, I've lately been finding that much of the available stocks of such "new old stock" tubes are either gassy, noisy, or unreliable – I do believe that we've reached the bottom of the barrel of NOS tubes.

Tube problems generally reveal themselves as a crackling noise which can occur continuously, sporadically, in response to mechanical vibration, or in response to your playing (e.g. a crackling or other type of noise which occurs only when you hit a note).

We subject all tubes to a thorough burn-in and test procedure to ensure that they are fully up to spec and operating perfectly. However, you must be aware that the majority of tube failures occur early in their life, and may come about as a result of the jostling and jarring that an amp can receive in shipping. In spite of the exhaustive testing we perform at the shop, early-life tube problems cannot always be found in such testing. The first two months or so are the most tenuous period for any set of tubes. Most manufacturing defects will be revealed in the first two months of their life, but many are not detectable in initial testing, even after a burn-in period.

If you notice any noises, cracking, or any other odd behavior of your amplifier in this period, note that it is most likely to be the result of a defective tube, and should be debugged as such.

# **Premier Builders Guild LLC**

## **Limited Warranty**

Premier Builders Guild LLC  
201 S. Highland Avenue, Suite 204  
Pittsburgh, PA 15206

This warranty gives you specific legal rights; you may also have other rights which vary from state to state. There are no express warranties except those listed below.

### **Length of Warranty**

This warranty shall remain in effect for five years from the date of sale of the product as shown on the original bill of sale.

### **What is Covered**

This warranty covers all defects in material and workmanship in this product, with the following exceptions:

1. Damage or deterioration of the cabinet, or any other cosmetic damage which occurs after delivery is not covered by this warranty.
2. Damage after initial delivery resulting from accident, unreasonable use, or neglect, is not covered by this warranty.
3. Damage resulting from the performance of repairs by someone other than the Tone King Amplifier Company is not covered by this warranty.
4. Damage occurring during shipment or delivery of this product to the Tone King Amplifier Company after initial delivery of the product is not covered by this warranty.
5. Vacuum tubes are considered a user-replaceable item, as they are expected to wear out and require replacement over a reasonable period of time. Tubes are warranted to be serviceable for a period of 90 days from the date of sale.
6. The speaker(s) in this amplifier has(have) been selected for use only with this amplifier. If the speaker(s) of this amplifier is(are) connected to an amplifier other than the intended amplifier, any warranty of this speaker shall be deemed void.

### **What We Will Pay For**

The Tone King Amplifier Company will pay for all labor and material expenses to fix or replace all items covered under this warranty. The customer will pay shipping charges to return the product to the Tone King Amplifier Company. If the necessary repairs are covered under this warranty, the Tone King Amplifier Company will pay any shipping charges required to return the product to the customer.

### **Limitation of Implied Warranties**

All express or implied warranties of merchantability and fitness for a particular purpose are limited in duration to the length of this warranty, unless otherwise provided by state law.

### **Exclusion of Certain Damages**

The Tone King Amplifier Company's liability is limited to the repair or replacement, at our option, of any defective product, and shall in no event include incidental or consequential damages of any kind. Some states do not allow limitations on the length of an implied warranty and/or do not allow the exclusion of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

### **Obtaining Warranty Service**

If your unit requires service, it should be returned to the Tone King Amplifier Company at the address listed above. Before returning the unit, you must contact the Tone King Amplifier Company and obtain return authorization.

# CE Declaration

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Premier Builders Guild, LLC  
201 S. Highland Avenue, Suite 204  
Pittsburgh, PA 15206  
412-362-0309



## DECLARATION OF CONFORMITY Report #R070212

We, Premier Builders Guild, in coordination with CES Laboratories, declare, taking this declaration under our total responsibility, that the below models are in conformity with the provisions of the following EC Directive(s) when installed in accordance with the installation instructions contained in the product documentation:

2006/95/EEC Low Voltage Directive  
2004/108/EEC EMC Directive  
2011/65/EEC RoHS-Directive

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And that the standards and/or technical specifications have been applied to the following families of products:

Imperial	Metropolitan
Galaxy	Falcon
Sky King	Royalist
Imperial MK II	Falcon Grande

Manufacturer/Importer  
Date: 8/25/2015

Signature: *Christopher W. Fleming*

Name and Title: *Christopher W. Fleming*  
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